



<110> Berner, Steven Albert
<120> Evolution-Based Functional Genomics
<140> 10/765,120
<141> 2004-01-28
<160> 38
<170> MacIntosh OS 10.3 Microsoft Word v. 2003

<210> 1
<211> 486
<212> PRT
<213> Tilapia nilotica
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Leu	Thr	Gly	Phe	Leu	Leu	Leu	Val	Trp	Asn	Tyr	Lys	Asn	Thr	Ser
				035					040					045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile
				050					055					060
Ser	Tyr	Leu	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Lys	Thr	Tyr	Gly	Glu	Phe	Ile	Arg	Val	Trp	Ile	Gly
				080					085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Val	Phe	His
				095					100					105
Val	Met	Lys	His	Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro
				110					115					120
Gly	Leu	Gln	Phe	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Val	Leu	Trp	Lys	Ala	Val	Arg	Thr	Tyr	Phe	Met	Lys
				140					145					150
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Val	Cys	Ala
				155					160					165
Asp	Ser	Ile	Thr	Lys	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Arg	Asn
				170					175					180
Asp	Leu	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met
				185					190					195
Leu	Asp	Thr	Ser	Asn	Asn	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu
				200					205					210
Lys	Ala	Ile	Val	Cys	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Leu	Lys	Pro	Asp	Ile	Phe	Phe	Lys	Ile	Pro	Trp	Leu
				230					235					240
Tyr	Arg	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Glu	Asp	Met
				245					250					255
Glu	Ile	Leu	Ile	Glu	Lys	Lys	Arg	Arg	Arg	Ile	Phe	Thr	Ala	Glu
				260					265					270

Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Leu	Ala	275	280	285
Glu	Lys	Arg	Gly	Glu	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	290	295	300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Val	305	310	315
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Gln	Val	Glu	Glu	320	325	330
Glu	Leu	Met	Lys	Glu	Ile	Gln	Thr	Val	Val	Gly	Glu	Arg	Asp	Ile	335	340	345
Arg	Asn	Asp	Asp	Met	Gln	Lys	Leu	Glu	Val	Val	Glu	Asn	Phe	Ile	350	355	360
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg	365	370	375
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	380	385	390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	395	400	405
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys	410	415	420
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	425	430	435
Ala	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Thr	440	445	450
Leu	Val	Ile	Leu	Leu	Arg	Arg	Phe	Gln	Val	Gln	Thr	Pro	Gln	Asp	455	460	465
Arg	Cys	Val	Glu	Lys	Met	Gln	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His	470	475	480
Pro	Asp	Glu	Thr	Ser	Gly										485		

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<211> 486

<212> PRT

<213> *Oryzias latipes*

<400> 2

Met	Phe	Leu	Glu	Met	Leu	Asn	Pro	Met	Gln	Tyr	Asn	Val	Thr	Ile	005	010	015
Met	Val	Pro	Glu	Thr	Val	Thr	Val	Ser	Ala	Met	Pro	Leu	Leu	Leu	020	025	030
Ile	Met	Gly	Leu	Leu	Leu	Leu	Ile	Trp	Asn	Cys	Glu	Ser	Ser	Ser	035	040	045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Leu	Gly	Ile	Gly	Pro	Leu	Ile	050	055	060
Ser	His	Gly	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	065	070	075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Ser	080	085	090

Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His
				095					100					105
Val	Met	Lys	His	Ser	His	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Arg
				110					115					120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Ser	Leu	Trp	Arg	Thr	Ile	Arg	Pro	Phe	Phe	Met	Lys
				140					145					150
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Glu	Val	Cys	Val
				155					160					165
Glu	Ser	Ile	Lys	Gln	His	Leu	Asp	Arg	Leu	Gly	Glu	Val	Thr	Asp
				170					175					180
Thr	Ser	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	His	Ile	Met
				185					190					195
Leu	Asp	Thr	Ser	Asn	Met	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu
				200					205					210
Ser	Ala	Ile	Val	Lys	Lys	Ile	Gln	Gly	Tyr	Phe	Asn	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
				230					235					240
Tyr	Arg	Lys	Tyr	Glu	Arg	Ser	Val	Lys	Asp	Leu	Lys	Asp	Glu	Ile
				245					250					255
Ala	Val	Leu	Val	Glu	Lys	Lys	Arg	His	Lys	Val	Ser	Thr	Ala	Glu
				260					265					270
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Phe	Ala
				275					280					285
Glu	Arg	Arg	Gly	Asp	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile
				290					295					300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Leu
				305					310					315
Tyr	Phe	Met	Leu	Leu	Leu	Val	Ala	Glu	Tyr	Pro	Glu	Val	Glu	Ala
				320					325					330
Ala	Ile	Leu	Lys	Glu	Ile	His	Thr	Val	Val	Gly	Asp	Arg	Asp	Ile
				335					340					345
Lys	Ile	Glu	Asp	Ile	Gln	Asn	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile
				350					355					360
Asn	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg
				365					370					375
Arg	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys
				380					385					390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu
				395					400					405
Tyr	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Glu	Lys
				410					415					420
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg
				425					430					435
Gly	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Val
				440					445					450

Leu	Val	Thr	Leu	Leu	Arg	Arg	Phe	Gln	Val	Lys	Thr	Leu	Gln	Lys
				455					460					465
Arg	Cys	Ile	Glu	Asn	Ile	Pro	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His
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Pro	Asn	Glu	Asp	Arg	His									
				485										

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<211> 486

<212> PRT

<213> Danio rerio

<400> 3

Met	Ile	Leu	Glu	Met	Leu	Asn	Pro	Met	His	Tyr	Asn	Leu	Thr	Ser
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Met	Val	Pro	Glu	Val	Met	Pro	Val	Ala	Thr	Leu	Pro	Ile	Leu	Leu
				020					025					030
Leu	Thr	Gly	Phe	Leu	Phe	Phe	Val	Trp	Asn	His	Glu	Glu	Thr	Ser
				035					040					045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile
				050					055					060
Ser	His	Leu	Arg	Phe	Leu	Trp	Met	Gly	Leu	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Val	Arg	Val	Trp	Ile	Ser
				080					085					090
Gly	Glu	Glu	Thr	Leu	Val	Ile	Ser	Lys	Ser	Ser	Ser	Thr	Phe	His
				095					100					105
Ile	Met	Lys	His	Asp	His	Tyr	Ser	Ser	Arg	Phe	Gly	Ser	Thr	Phe
				110					115					120
Gly	Leu	Gln	Tyr	Met	Gly	Met	His	Glu	Asn	Gly	Val	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Ala	Val	Trp	Lys	Ala	Leu	Arg	Pro	Phe	Phe	Val	Lys
				140					145					150
Ala	Leu	Ser	Gly	Pro	Ser	Leu	Ala	Arg	Met	Val	Thr	Val	Cys	Val
				155					160					165
Glu	Ser	Val	Asn	Asn	His	Leu	Asp	Arg	Leu	Asp	Glu	Val	Thr	Asn
				170					175					180
Ala	Leu	Gly	His	Val	Asn	Val	Leu	Thr	Leu	Met	Arg	Arg	Thr	Met
				185					190					195
Leu	Asp	Ala	Ser	Asn	Thr	Leu	Phe	Leu	Arg	Ile	Pro	Leu	Asp	Glu
				200					205					210
Lys	Asn	Ile	Val	Leu	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
				230					235					240
Ser	Arg	Lys	His	Gln	Lys	Ser	Ile	Lys	Glu	Leu	Arg	Asp	Ala	Val
				245					250					255
Gly	Ile	Leu	Ala	Glu	Glu	Lys	Arg	His	Arg	Ile	Phe	Thr	Ala	Glu
				260					265					270

Lys	Leu	Glu	Asp	His	Val	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Leu	Ala	
				275										280	285
Glu	Lys	Arg	Gly	Glu	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	
				290										295	300
Leu	Glu	Met	Met	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Val	Thr	Val	
				305										310	315
Phe	Phe	Met	Leu	Cys	Leu	Ile	Ala	Gln	His	Pro	Lys	Val	Glu	Glu	
				320										325	330
Ala	Leu	Met	Lys	Glu	Ile	Gln	Thr	Val	Leu	Gly	Glu	Arg	Asp	Leu	
				335										340	345
Lys	Asn	Asp	Asp	Met	Gln	Lys	Leu	Lys	Val	Met	Glu	Asn	Phe	Ile	
				350										355	360
Asn	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Ile	Val	Met	Arg	
				365										370	375
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	
				380										385	390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Leu	Glu	
				395										400	405
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Glu	Lys	
				410										415	420
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	
				425										430	435
Ser	Cys	Ala	Gly	Lys	Phe	Ile	Ala	Met	Val	Met	Met	Lys	Val	Met	
				440										445	450
Leu	Val	Ser	Leu	Leu	Arg	Arg	Phe	His	Val	Lys	Thr	Leu	Gln	Gly	
				455										460	465
Asn	Cys	Leu	Glu	Asn	Met	Gln	Lys	Thr	Asn	Asp	Leu	Ala	Leu	His	
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Pro	Asp	Glu	Ser	Arg	Ser										
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<211> 487

<212> PRT

<213> Carassius auratus

<400> 4

Val	Leu	Glu	Leu	Leu	Met	Gln	Gly	Ala	His	Asn	Ser	Ser	Tyr	Gly	
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Ala	Gln	Asp	Asn	Val	Cys	Gly	Ala	Met	Ala	Thr	Leu	Leu	Leu	Leu	
				020										025	030
Leu	Leu	Cys	Leu	Leu	Leu	Ala	Ile	Arg	His	His	Trp	Thr	Glu	Lys	
				035										040	045
Asp	His	Val	Pro	Gly	Pro	Cys	Phe	Leu	Leu	Gly	Leu	Gly	Pro	Leu	
				050										055	060
Leu	Ser	Tyr	Cys	Arg	Leu	Ile	Trp	Ser	Gly	Ile	Gly	Thr	Ala	Ser	
				065										070	075
Asn	Tyr	Tyr	Asn	Ser	Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile	
				080										085	090

Asn	Gly	Glu	Glu	Thr	Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	Tyr	
				095					100					105	
His	Val	Leu	Arg	Lys	Ser	Leu	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	
				110					115					120	
Leu	Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Gln	Gly	Ile	Ile	Phe	
				125					130					135	
Asn	Ser	Asn	Val	Ala	Leu	Trp	Lys	Lys	Val	Arg	Thr	Phe	Tyr	Ala	
				140					145					150	
Lys	Ala	Leu	Thr	Gly	Pro	Gly	Leu	Gln	Arg	Thr	Leu	Glu	Ile	Cys	
				155					160					165	
Ile	Thr	Ser	Thr	Asn	Thr	His	Leu	Asp	Asn	Leu	Ser	His	Leu	Met	
				170					175					180	
Asp	Ala	Arg	Gly	Gln	Val	Asp	Ile	Leu	Asn	Leu	Leu	Arg	Cys	Ile	
				185					190					195	
Val	Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asn	
				200					205					210	
Glu	His	Asp	Leu	Leu	Gln	Lys	Ile	His	Lys	Tyr	Phe	Asp	Thr	Trp	
				215					220					225	
Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Val	Tyr	Phe	Arg	Leu	Ala	Trp	
				230					235					240	
Trp	Leu	His	Gly	Lys	His	Lys	Arg	Asp	Ala	Gln	Glu	Leu	Gln	Asp	
				245					250					255	
Ala	Ile	Ala	Ala	Leu	Ile	Glu	Gln	Lys	Arg	Val	Gln	Leu	Thr	Arg	
				260					265					270	
Ala	Glu	Lys	Phe	Asp	Gln	Leu	Asp	Phe	Thr	Gly	Glu	Leu	Ile	Phe	
				275					280					285	
Ala	Gln	Ser	His	Gly	Glu	Leu	Ser	Thr	Glu	Asn	Val	Arg	Gln	Cys	
				290					295					300	
Val	Leu	Glu	Met	Ile	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	
				305					310					315	
Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Pro	Asp	Val	Glu	
				320					325					330	
Leu	Lys	Ile	Leu	Gln	Glu	Met	Asn	Ala	Val	Leu	Ala	Gly	Arg	Ser	
				335					340					345	
Leu	Gln	His	Ser	His	Leu	Ser	Gly	Leu	His	Ile	Leu	Glu	Ser	Phe	
				350					355					360	
Ile	Asn	Glu	Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Thr	Met	
				365					370					375	
Arg	Arg	Ala	Leu	Asp	Asp	Asp	Val	Ile	Glu	Gly	Tyr	Glu	Val	Lys	
				380					385					390	
Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Val	Gly	Arg	Met	His	Arg	Ser	
				395					400					405	
Glu	Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Ser	Leu	Asp	Asn	Phe	Gln	
				410					415					420	
Lys	Asn	Val	Pro	Ser	Arg	Phe	Phe	Gln	Pro	Phe	Gly	Ser	Gly	Pro	
				425					430					435	
Arg	Ser	Cys	Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Met	Lys	Ser	
				440					445					450	

Ile	Leu	Val	Thr	Leu	Leu	Ser	Arg	Phe	Ser	Val	Cys	Pro	Val	Lys
				455					460					465
Gly	Cys	Thr	Val	Asp	Ser	Ile	Pro	Gln	Thr	Asn	Asp	Leu	Ser	Gln
				470					475					480
Gln	Pro	Val	Glu	Glu	Pro	Ser								
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<212> PRT

<213> Ictalurus punctatus

<400> 5

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Gln	Val	Thr	Leu	Met	Ala	Leu	Thr	Gly	Thr	Leu	Leu	Leu	Ile	Leu
			020					025					030	
Leu	His	Arg	Ile	Phe	Thr	Ala	Lys	Asn	Trp	Arg	Asn	Gln	Ser	Gly
			035					040					045	
Val	Pro	Gly	Pro	Gly	Trp	Leu	Leu	Gly	Leu	Gly	Pro	Ile	Met	Ser
			050					055					060	
Tyr	Ser	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	Tyr
			065					070					075	
Tyr	Asn	Glu	Lys	Tyr	Gly	Ser	Ile	Ala	Arg	Val	Trp	Ile	Ser	Gly
			080					085					090	
Glu	Glu	Thr	Phe	Ile	Leu	Ser	Lys	Ser	Ser	Ala	Val	Tyr	His	Val
			095					100					105	
Leu	Lys	Ser	Asn	Asn	Tyr	Thr	Gly	Arg	Phe	Ala	Ser	Lys	Lys	Gly
			110					115					120	
Leu	Gln	Cys	Ile	Gly	Met	Phe	Glu	Gln	Gly	Ile	Ile	Phe	Asn	Ser
			125					130					135	
Asn	Met	Ala	Leu	Trp	Lys	Lys	Val	Arg	Thr	Tyr	Phe	Thr	Lys	Ala
			140					145					150	
Leu	Thr	Gly	Pro	Gly	Leu	Gln	Lys	Ser	Val	Asp	Val	Cys	Val	Ser
			155					160					165	
Ala	Thr	Asn	Lys	Gln	Leu	Asn	Val	Leu	Gln	Glu	Phe	Thr	Asp	His
			170					175					180	
Ser	Gly	His	Val	Asp	Val	Leu	Asn	Leu	Leu	Arg	Cys	Ile	Val	Val
			185					190					195	
Asp	Val	Ser	Asn	Arg	Leu	Phe	Leu	Arg	Ile	Pro	Leu	Asn	Glu	Lys
			200					205					210	
Asp	Leu	Leu	Ile	Lys	Ile	His	Arg	Tyr	Phe	Ser	Thr	Trp	Gln	Ala
			215					220					225	
Val	Leu	Ile	Gln	Pro	Asp	Val	Phe	Phe	Arg	Leu	Asn	Phe	Val	Tyr
			230					235					240	
Lys	Lys	Tyr	His	Leu	Ala	Ala	Lys	Glu	Leu	Gln	Asp	Glu	Met	Gly
			245					250					255	
Lys	Leu	Val	Glu	Gln	Lys	Arg	Gln	Ala	Ile	Asn	Asn	Met	Glu	Lys
			260					265					270	

Leu	Asp	Glu	Thr	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Phe	Ala	Gln	Asn	275	280	285
His	Asp	Glu	Leu	Ser	Val	Asp	Asp	Val	Arg	Gln	Cys	Val	Leu	Glu	290	295	300
Met	Val	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	Leu	Phe	Phe	305	310	315
Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Ser	Val	Val	Glu	Glu	Gln	Ile	320	325	330
Val	Gln	Glu	Ile	Gln	Ser	Gln	Ile	Gly	Glu	Arg	Asp	Val	Glu	Ser	335	340	345
Ala	Asp	Leu	Gln	Lys	Leu	Asn	Val	Leu	Glu	Arg	Phe	Ile	Lys	Glu	350	355	360
Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Ile	Met	Arg	Arg	Ala	365	370	375
Leu	Glu	Asp	Asp	Glu	Ile	Asp	Gly	Tyr	Arg	Val	Ala	Lys	Gly	Thr	380	385	390
Asn	Leu	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Ser	Glu	Phe	Phe	395	400	405
Gln	Lys	Pro	Asn	Glu	Phe	Asn	Leu	Glu	Asn	Phe	Glu	Asn	Thr	Val	410	415	420
Pro	Ser	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Cys	Gly	Pro	Arg	Ala	Cys	425	430	435
Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Thr	Lys	Ala	Ile	Leu	Val	440	445	450
Thr	Leu	Leu	Ser	Arg	Phe	Thr	Val	Cys	Pro	Arg	His	Gly	Cys	Thr	455	460	465
Val	Ser	Thr	Ile	Lys	Gln	Thr	Asn	Asn	Leu	Ser	Met	Gln	Pro	Val	470	475	480
Glu	Glu	Asp	Pro														

<210> 6

<211> 486

<212> PRT

<213> Carassius auratus

<400> 6

Val	Val	Asp	Leu	Leu	Ile	Gln	Arg	Ala	His	Asn	Gly	Thr	Glu	Arg	005	010	015
Ala	Gln	Asp	Asn	Ala	Cys	Gly	Ala	Thr	Ala	Thr	Ile	Leu	Leu	Leu	020	025	030
Leu	Leu	Cys	Leu	Leu	Leu	Ala	Ile	Arg	His	His	Arg	Pro	His	Lys	035	040	045
Ser	His	Ile	Pro	Gly	Pro	Ser	Phe	Phe	Phe	Gly	Leu	Gly	Pro	Val	050	055	060
Val	Ser	Tyr	Cys	Arg	Phe	Ile	Trp	Ser	Gly	Ile	Gly	Thr	Ala	Ser	065	070	075
Asn	Tyr	Tyr	Asn	Ser	Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile	080	085	090
Asn	Gly	Glu	Glu	Thr	Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	Tyr			

				095					100					105
His	Val	Leu	Arg	Lys	Ser	Leu	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys
				110					115					120
Leu	Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Gln	Gly	Ile	Ile	Phe
				125					130					135
Asn	Ser	Asn	Val	Ala	Leu	Trp	Lys	Lys	Val	Arg	Ala	Phe	Tyr	Ala
				140					145					150
Lys	Ala	Leu	Thr	Gly	Pro	Gly	Leu	Gln	Arg	Thr	Met	Glu	Ile	Cys
				155					160					165
Thr	Thr	Ser	Thr	Asn	Ser	His	Leu	Asp	Asp	Leu	Ser	Gln	Leu	Thr
				170					175					180
Asp	Ala	Gln	Gly	Gln	Leu	Asp	Ile	Leu	Asn	Leu	Leu	Arg	Cys	Ile
				185					190					195
Val	Val	Asp	Val	Ser	Asn	Arg	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asn
				200					205					210
Glu	His	Asp	Leu	Leu	Gln	Lys	Ile	His	Lys	Tyr	Phe	Asp	Thr	Trp
				215					220					225
Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Val	Tyr	Phe	Arg	Leu	Asp	Trp
				230					235					240
Leu	His	Arg	Lys	His	Lys	Arg	Asp	Ala	Gln	Glu	Leu	Gln	Asp	Ala
				245					250					255
Ile	Thr	Ala	Leu	Ile	Glu	Gln	Lys	Lys	Val	Gln	Leu	Ala	His	Ala
				260					265					270
Glu	Lys	Leu	Asp	His	Leu	Asp	Phe	Thr	Ala	Glu	Leu	Ile	Phe	Ala
				275					280					285
Gln	Ser	His	Gly	Glu	Leu	Ser	Ala	Glu	Asn	Val	Arg	Gln	Cys	Val
				290					295					300
Leu	Glu	Met	Val	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	Leu
				305					310					315
Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Pro	Asp	Val	Glu	Leu
				320					325					330
Lys	Ile	Leu	Gln	Glu	Met	Asp	Ser	Val	Leu	Ala	Gly	Gln	Ser	Leu
				335					340					345
Gln	His	Ser	His	Leu	Ser	Lys	Leu	Gln	Ile	Leu	Glu	Ser	Phe	Ile
				350					355					360
Asn	Glu	Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Thr	Met	Arg
				365					370					375
Arg	Ala	Leu	Asp	Asp	Asp	Val	Ile	Glu	Gly	Tyr	Asn	Val	Lys	Lys
				380					385					390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Val	Gly	Arg	Met	His	Arg	Ser	Glu
				395					400					405
Phe	Phe	Ser	Lys	Pro	Asn	Gln	Phe	Ser	Leu	Asp	Asn	Phe	His	Lys
				410					415					420
Asn	Val	Pro	Ser	Arg	Phe	Phe	Gln	Pro	Phe	Gly	Ser	Gly	Pro	Arg
				425					430					435
Ser	Cys	Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Met	Lys	Ser	Ile
				440					445					450
Leu	Val	Ala	Leu	Leu	Ser	Arg	Phe	Ser	Val	Cys	Pro	Met	Lys	Ala

	455		460		465
Cys Thr Val Glu	Asn Ile Pro Gln Thr	Asn Asn Leu Ser Gln	Gln		
	470		475		480
Pro Val Glu Glu	Pro Ser				
	485				

<210> 7

<211> 486

<212> PRT

<213> Sus scrofa (pig) placental

<400> 7

Met Val Leu Glu	Met Leu Asn Pro Met	Tyr Tyr Lys Ile Thr	Ser
	005	010	015
Met Val Ser Glu	Val Val Pro Phe Ala	Ser Ile Ala Val Leu	Leu
	020	025	030
Leu Thr Gly Phe	Leu Leu Leu Leu Trp	Asn Tyr Glu Asn Thr	Ser
	035	040	045
Ser Ile Pro Ser	Pro Gly Tyr Phe Leu	Gly Ile Gly Pro Leu	Ile
	050	055	060
Ser His Phe Arg	Phe Leu Trp Met Gly	Ile Gly Ser Ala Cys	Asn
	065	070	075
Tyr Tyr Asn Glu	Met Tyr Gly Glu Phe	Met Arg Val Trp Ile	Gly
	080	085	090
Gly Glu Glu Thr	Leu Ile Ile Ser Lys	Ser Ser Ser Val Phe	His
	095	100	105
Val Met Lys His	Ser His Tyr Thr Ser	Arg Phe Gly Ser Lys	Pro
	110	115	120
Gly Leu Glu Cys	Ile Gly Met Tyr Glu	Lys Gly Ile Ile Phe	Asn
	125	130	135
Asn Asp Pro Ala	Leu Trp Lys Ala Val	Arg Thr Tyr Phe Met	Lys
	140	145	150
Ala Leu Ser Gly	Pro Gly Leu Val Arg	Met Val Thr Val Cys	Ala
	155	160	165
Asp Ser Ile Thr	Lys His Leu Asp Lys	Leu Glu Glu Val Arg	Asn
	170	175	180
Asp Leu Gly Tyr	Val Asp Val Leu Thr	Leu Met Arg Arg Ile	Met
	185	190	195
Leu Asp Thr Ser	Asn Asn Leu Phe Leu	Gly Ile Pro Leu Asp	Glu
	200	205	210
Lys Ala Ile Val	Cys Lys Ile Gln Gly	Tyr Phe Asp Ala Trp	Gln
	215	220	225
Ala Leu Leu Leu	Lys Pro Glu Phe Phe	Phe Lys Phe Ser Trp	Leu
	230	235	240
Tyr Lys Lys His	Lys Glu Ser Val Lys	Asp Leu Lys Glu Asn	Met
	245	250	255
Glu Ile Leu Ile	Glu Lys Lys Arg Cys	Ser Ile Ile Thr Ala	Glu
	260	265	270
Lys Leu Glu Asp	Cys Met Asp Phe Ala	Thr Glu Leu Ile Leu	Ala

	275		280		285
Glu Lys Arg Gly	Glu Leu Thr Lys Glu	Asn Val Asn Gln Cys	Ile		
	290		295		300
Leu Glu Met Leu	Ile Ala Ala Pro Asp Thr	Leu Ser Val Thr	Val		
	305		310		315
Phe Phe Met Leu	Phe Leu Ile Ala Lys	His Pro Gln Val Glu	Glu		
	320		325		330
Ala Ile Val Lys	Glu Ile Gln Thr Val	Ile Gly Glu Arg Asp	Ile		
	335		340		345
Arg Asn Asp Asp	Met Gln Lys Leu Lys	Val Val Glu Asn Phe	Ile		
	350		355		360
Tyr Glu Ser Met	Arg Tyr Gln Pro Val	Val Asp Leu Val Met	Arg		
	365		370		375
Lys Ala Leu Glu	Asp Asp Val Ile Asp	Gly Tyr Pro Val Lys	Lys		
	380		385		390
Gly Thr Asn Ile	Ile Leu Asn Ile Gly	Arg Met His Arg Leu	Glu		
	395		400		405
Phe Phe Pro Lys	Pro Asn Glu Phe Thr	Leu Glu Asn Phe Ala	Lys		
	410		415		420
Asn Val Pro Tyr	Arg Tyr Phe Gln Pro	Phe Gly Phe Gly Pro	Arg		
	425		430		435
Ala Cys Ala Gly	Lys Tyr Ile Ala Met	Val Met Met Lys Val	Thr		
	440		445		450
Leu Val Ile Leu	Leu Arg Arg Phe Gln	Val Gln Thr Pro Gln	Asp		
	455		460		465
Arg Cys Val Glu	Lys Met Gln Lys Lys	Asn Asp Leu Ser Leu	His		
	470		475		480
Pro Asp Glu Thr	Ser Gly				
	485				

<210> 8

<211> 476

<212> PRT

<213> Sus scrofa (pig) embryo

<400> 8

Leu Val Ser Ile	Ala Pro Asn Thr Thr	Val Gly Leu Pro Ser	Gly		
	005		010		015
Ile Pro Met Ala	Thr Arg Ser Leu Ile	Leu Leu Val Cys Leu	Leu		
	020		025		030
Leu Met Val Trp	Ser His Ser Glu Lys	Lys Thr Ile Pro Gly	Pro		
	035		040		045
Ser Phe Cys Leu	Gly Leu Gly Pro Leu	Met Ser Tyr Leu Arg	Phe		
	050		055		060
Ile Trp Thr Gly	Ile Gly Thr Ala Ser	Asn Tyr Tyr Asn Asn	Lys		
	065		070		075
Tyr Gly Asp Ile	Val Arg Val Trp Ile	Asn Gly Glu Glu Thr	Leu		
	080		085		090
Ile Leu Ser Arg	Ala Ser Ala Val His	His Val Leu Lys Asn	Arg		

				095					100					105
Lys	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Gln	Gly	Leu	Ser	Cys	Ile
				110					115					120
Gly	Met	Asn	Glu	Lys	Gly	Ile	Ile	Phe	Asn	Asn	Asn	Val	Ala	Leu
				125					130					135
Trp	Lys	Lys	Ile	Arg	Thr	Tyr	Phe	Thr	Lys	Ala	Leu	Thr	Gly	Pro
				140					145					150
Asn	Leu	Gln	Gln	Thr	Val	Glu	Val	Cys	Val	Thr	Ser	Thr	Gln	Thr
				155					160					165
His	Leu	Asp	Asn	Leu	Ser	Ser	Leu	Ser	Tyr	Val	Asp	Val	Leu	Gly
				170					175					180
Phe	Leu	Arg	Cys	Thr	Val	Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu
				185					190					195
Gly	Val	Pro	Val	Asp	Glu	Lys	Glu	Leu	Leu	Gln	Lys	Ile	His	Lys
				200					205					210
Tyr	Phe	Asp	Thr	Trp	Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Ile	Tyr
				215					220					225
Phe	Lys	Phe	Ser	Trp	Ile	His	Gln	Arg	His	Lys	Thr	Ala	Ala	Gln
				230					235					240
Glu	Leu	Gln	Asp	Ala	Ile	Glu	Ser	Leu	Val	Glu	Arg	Lys	Arg	Lys
				245					250					255
Glu	Met	Glu	Gln	Ala	Glu	Lys	Leu	Asp	Asn	Ile	Asn	Phe	Thr	Ala
				260					265					270
Glu	Leu	Ile	Phe	Ala	Gln	Gly	His	Gly	Glu	Leu	Ser	Ala	Glu	Asn
				275					280					285
Val	Arg	Gln	Cys	Val	Leu	Glu	Met	Val	Ile	Ala	Ala	Pro	Asp	Thr
				290					295					300
Leu	Ser	Ile	Ser	Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn
				305					310					315
Pro	His	Val	Glu	Leu	Gln	Leu	Leu	Gln	Glu	Ile	Asp	Thr	Ile	Val
				320					325					330
Gly	Asp	Ser	Gln	Leu	Gln	Asn	Gln	Asp	Leu	Gln	Lys	Leu	Gln	Val
				335					340					345
Leu	Glu	Ser	Phe	Ile	Asn	Glu	Cys	Leu	Arg	Phe	His	Pro	Val	Val
				350					355					360
Asp	Phe	Thr	Met	Arg	Arg	Ala	Leu	Phe	Asp	Asp	Ile	Ile	Asp	Gly
				365					370					375
His	Arg	Val	Gln	Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Thr	Gly	Arg
				380					385					390
Met	His	Arg	Thr	Glu	Phe	Phe	His	Lys	Ala	Asn	Glu	Phe	Ser	Leu
				395					400					405
Glu	Asn	Phe	Gln	Lys	Asn	Thr	Pro	Arg	Arg	Tyr	Phe	Gln	Pro	Phe
				410					415					420
Gly	Ser	Gly	Pro	Arg	Ala	Cys	Val	Gly	Arg	His	Ile	Ala	Met	Val
				425					430					435
Met	Met	Lys	Ser	Ile	Leu	Val	Thr	Leu	Leu	Ser	Gln	Tyr	Ser	Val
				440					445					450
Cys	Pro	His	Glu	Gly	Leu	Thr	Leu	Asp	Cys	Leu	Pro	Gln	Thr	Asn

	455		460		465
Asn Leu Ser Gln	Gln Pro Val Glu His	His Gln			
	470		475		

<210> 9

<211> 484

<212> PRT

<213> Sus scrofa (pig) ovary

<400> 9

Met Val Leu Glu	Met Leu Asn Pro Met	Asn Ile Ser Ser Met	Val
005	010		015
Ser Glu Ala Val	Leu Phe Gly Ser Ile	Ala Ile Leu Leu Leu	Ile
020	025		030
Gly Leu Leu Leu	Trp Val Trp Asn Tyr	Glu Asp Thr Ser Ser	Ile
035	040		045
Pro Gly Pro Gly	Tyr Phe Leu Gly Ile	Gly Pro Leu Ile Ser	His
050	055		060
Phe Arg Phe Leu	Trp Met Gly Ile Gly	Ser Ala Cys Asn Tyr	Tyr
065	070		075
Asn Lys Met Tyr	Gly Glu Phe Met Arg	Val Trp Ile Gly Gly	Glu
080	085		090
Glu Thr Leu Ile	Ile Ser Lys Ser Ser	Ser Ile Phe His Ile	Met
095	100		105
Lys His Asn His	Tyr Thr Cys Arg Phe	Gly Ser Lys Leu Gly	Leu
110	115		120
Glu Cys Ile Gly	Met His Glu Lys Gly	Ile Met Phe Asn Asn	Asn
125	130		135
Pro Ala Leu Trp	Lys Ala Val Arg Pro	Phe Phe Thr Lys Ala	Leu
140	145		150
Ser Gly Pro Gly	Leu Val Arg Met Val	Thr Val Cys Ala Asp	Ser
155	160		165
Ile Thr Lys His	Leu Asp Lys Leu Glu	Glu Val Arg Asn Asp	Leu
170	175		180
Gly Tyr Val Asp	Val Leu Thr Leu Met	Arg Arg Ile Met Leu	Asp
185	190		195
Thr Ser Asn Asn	Leu Phe Leu Gly Ile	Pro Leu Asp Glu Ser	Ala
200	205		210
Leu Val His Lys	Val Gln Gly Tyr Phe	Asp Ala Trp Gln Ala	Leu
215	220		225
Leu Leu Lys Pro	Asp Ile Phe Phe Lys	Ile Ser Trp Leu Tyr	Arg
230	235		240
Lys Tyr Glu Lys	Ser Val Lys Asp Leu	Lys Asp Ala Met Glu	Ile
245	250		255
Leu Ile Glu Glu	Lys Arg His Arg Ile	Ser Thr Ala Glu Lys	Leu
260	265		270
Glu Asp Ser Met	Asp Phe Thr Thr Gln	Leu Ile Phe Ala Glu	Lys
275	280		285
Arg Gly Glu Leu	Thr Lys Glu Asn Val	Asn Gln Cys Val Leu	Glu

				290					295					300
Met	Met	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Ile	Thr	Val	Phe	Phe
				305					310					315
Met	Leu	Phe	Leu	Ile	Ala	Asn	His	Pro	Gln	Val	Glu	Glu	Glu	Leu
				320					325					330
Met	Lys	Glu	Ile	Tyr	Thr	Val	Val	Gly	Glu	Arg	Asp	Ile	Arg	Asn
				335					340					345
Asp	Asp	Met	Gln	Lys	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile	Tyr	Glu
				350					355					360
Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Phe	Val	Met	Arg	Lys	Ala
				365					370					375
Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	Gly	Thr
				380					385					390
Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	Phe	Phe
				395					400					405
Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys	Asn	Val
				410					415					420
Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	Ala	Cys
				425					430					435
Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Ile	Leu	Val
				440					445					450
Thr	Leu	Leu	Arg	Arg	Phe	Gln	Val	Gln	Thr	Gln	Gln	Gly	Gln	Cys
				455					460					465
Val	Glu	Lys	Met	Gln	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His	Pro	His
				470					475					480
Glu	Thr	Ser	Gly											

<210> 10

<211> 486

<212> PRT

<213> Bos taurus

<400> 10

Met	Val	Leu	Glu	Met	Leu	Asn	Pro	Met	His	Phe	Asn	Ile	Thr	Thr
				005					010					015
Met	Val	Pro	Ala	Ala	Met	Pro	Ala	Ala	Thr	Met	Pro	Ile	Leu	Leu
				020					025					030
Leu	Thr	Cys	Leu	Leu	Leu	Leu	Ile	Trp	Asn	Tyr	Glu	Gly	Thr	Ser
				035					040					045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile
				050					055					060
Ser	Tyr	Ala	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Ile	Arg	Val	Trp	Ile	Cys
				080					085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His
				095					100					105
Val	Met	Lys	His	Ser	His	Tyr	Val	Ser	Arg	Phe	Gly	Ser	Lys	Pro
				110					115					120

Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn	
				125					130					135	
Asn	Asn	Pro	Ala	Leu	Trp	Lys	Val	Val	Arg	Pro	Phe	Phe	Met	Lys	
				140					145					150	
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Val	Gln	Met	Val	Ala	Ile	Cys	Val	
				155					160					165	
Gly	Ser	Ile	Gly	Arg	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Thr	Thr	
				170					175					180	
Arg	Ser	Gly	Cys	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met	
				185					190					195	
Leu	Asp	Thr	Ser	Asn	Thr	Leu	Phe	Leu	Gly	Ile	Pro	Met	Asp	Glu	
				200					205					210	
Ser	Ala	Ile	Val	Val	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln	
				215					220					225	
Ala	Leu	Leu	Leu	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	
				230					235					240	
Tyr	Lys	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Asp	Ala	Ile	
				245					250					255	
Asp	Ile	Leu	Val	Glu	Lys	Lys	Arg	Arg	Arg	Ile	Ser	Thr	Ala	Glu	
				260					265					270	
Lys	Leu	Glu	Asp	His	Met	Asp	Phe	Ala	Thr	Asn	Leu	Ile	Phe	Ala	
				275					280					285	
Glu	Lys	Arg	Gly	Asp	Leu	Thr	Arg	Glu	Asn	Val	Asn	Gln	Cys	Val	
				290					295					300	
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Ser	Val	
				305					310					315	
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Ser	Val	Glu	Glu	
				320					325					330	
Ala	Ile	Met	Glu	Glu	Ile	Gln	Thr	Val	Val	Gly	Glu	Arg	Asp	Ile	
				335					340					345	
Arg	Ile	Asp	Asp	Ile	Gln	Lys	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile	
				350					355					360	
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg	
				365					370					375	
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	
				380					385					390	
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	
				395					400					405	
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys	
				410					415					420	
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	
				425					430					435	
Gly	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Ile	
				440					445					450	
Leu	Val	Thr	Leu	Leu	Arg	Arg	Phe	Gln	Val	Lys	Ala	Leu	Gln	Gly	
				455					460					465	
Arg	Ser	Val	Glu	Asn	Ile	Gln	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His	
				470					475					480	

Pro Asp Glu Thr Ser Asp
485

<210> 11

<211> 485

<212> PRT

<213> Equus caballus

<400> 11

Val	Met	Glu	Ile	Leu	Leu	Arg	Glu	Ala	Arg	Asn	Gly	Thr	Asp	Pro	
				005					010					015	
Arg	Tyr	Glu	Asn	Pro	Arg	Gly	Ile	Thr	Leu	Leu	Leu	Leu	Leu	Cys	
				020					025					030	
Leu	Val	Leu	Leu	Leu	Thr	Val	Trp	Asn	Arg	His	Glu	Lys	Lys	Cys	
				035					040					045	
Ser	Ile	Pro	Gly	Pro	Ser	Phe	Cys	Leu	Gly	Leu	Gly	Pro	Leu	Met	
				050					055					060	
Ser	Tyr	Cys	Arg	Phe	Ile	Trp	Met	Gly	Ile	Gly	Thr	Ala	Ser	Asn	
				065					070					075	
Tyr	Tyr	Asn	Glu	Lys	Tyr	Gly	Asp	Met	Val	Arg	Val	Trp	Ile	Ser	
				080					085					090	
Gly	Glu	Glu	Thr	Leu	Val	Leu	Ser	Arg	Pro	Ser	Ala	Val	Tyr	His	
				095					100					105	
Val	Leu	Lys	His	Ser	Gln	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Leu	
				110					115					120	
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Gln	Gly	Ile	Ile	Phe	Asn	
				125					130					135	
Ser	Asn	Val	Thr	Leu	Trp	Arg	Lys	Val	Arg	Thr	Tyr	Phe	Ala	Lys	
				140					145					150	
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Gln	Arg	Thr	Leu	Glu	Ile	Cys	Thr	
				155					160					165	
Met	Ser	Thr	Asn	Thr	His	Leu	Asp	Gly	Leu	Ser	Arg	Leu	Thr	Asp	
				170					175					180	
Ala	Gln	Gly	His	Val	Asp	Val	Leu	Asn	Leu	Leu	Arg	Cys	Ile	Val	
				185					190					195	
Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu	Asp	Val	Pro	Leu	Asn	Glu	
				200					205					210	
Gln	Asn	Leu	Leu	Phe	Lys	Ile	His	Arg	Tyr	Phe	Glu	Thr	Trp	Gln	
				215					220					225	
Thr	Val	Leu	Ile	Lys	Pro	Asp	Phe	Tyr	Phe	Arg	Leu	Lys	Trp	Leu	
				230					235					240	
His	Asp	Lys	His	Arg	Asn	Ala	Ala	Gln	Glu	Leu	His	Asp	Ala	Ile	
				245					250					255	
Glu	Asp	Leu	Ile	Glu	Gln	Lys	Arg	Thr	Glu	Leu	Gln	Gln	Ala	Glu	
				260					265					270	
Lys	Leu	Asp	Asn	Leu	Asn	Phe	Thr	Glu	Glu	Leu	Ile	Phe	Ala	Gln	
				275					280					285	
Ser	His	Gly	Glu	Leu	Thr	Ala	Glu	Asn	Val	Arg	Gln	Cys	Val	Leu	
				290					295					300	

Glu Met Val Ile	Ala Ala Pro Asp Thr	Leu Ser Ile Ser Val	Phe
	305	310	315
Phe Met Leu Leu	Leu Leu Lys Gln Asn	Ala Glu Val Glu Arg	Arg
	320	325	330
Ile Leu Thr Glu	Ile His Thr Val Leu	Gly Asp Thr Glu Leu	Gln
	335	340	345
His Ser His Leu	Ser Gln Leu His Val	Leu Glu Cys Phe Ile	Asn
	350	355	360
Glu Ala Leu Arg	Phe His Pro Val Val	Asp Phe Ser Tyr Arg	Arg
	365	370	375
Ala Leu Asp Asp	Asp Val Ile Glu Gly	Phe Arg Val Pro Arg	Gly
	380	385	390
Thr Asn Ile Ile	Leu Asn Val Gly Arg	Met His Arg Ser Glu	Phe
	395	400	405
Tyr Pro Lys Pro	Ala Asp Phe Ser Leu	Asp Asn Phe Asn Lys	Pro
	410	415	420
Val Pro Ser Arg	Phe Phe Gln Pro Phe	Gly Ser Gly Pro Arg	Ser
	425	430	435
Cys Val Gly Lys	His Ile Ala Met Val	Met Met Lys Ala Val	Leu
	440	445	450
Leu Met Val Leu	Ser Arg Phe Ser Val	Cys Pro Glu Glu Ser	Cys
	455	460	465
Thr Val Glu Asn	Ile Ala His Thr Asn	Asp Leu Ser Gln Gln	Pro
	470	475	480
Val Glu Asp Lys	His		
	485		

<210> 12

<211> 486

<212> PRT

<213> Mus musculus

<400> 12

Met Val Leu Glu	Thr Leu Asn Pro Leu	His Tyr Asn Ile Thr	Ser
	005	010	015
Leu Val Pro Asp	Thr Met Pro Val Ala	Thr Val Pro Ile Leu	Ile
	020	025	030
Leu Met Cys Phe	Leu Phe Leu Ile Trp	Asn His Glu Glu Thr	Ser
	035	040	045
Ser Ile Pro Gly	Pro Gly Tyr Cys Met	Gly Ile Gly Pro Leu	Ile
	050	055	060
Ser His Gly Arg	Phe Leu Trp Met Gly	Val Gly Asn Ala Cys	Asn
	065	070	075
Tyr Tyr Asn Lys	Thr Tyr Gly Asp Phe	Val Arg Val Trp Ile	Ser
	080	085	090
Gly Glu Glu Thr	Phe Ile Ile Ser Lys	Ser Ser Ser Val Ser	His
	095	100	105
Val Met Lys His	Trp His Tyr Val Ser	Arg Phe Gly Ser Lys	Leu
	110	115	120

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Gly	Leu	Gln	Cys	Ile	Gly	Met	Tyr	Glu	Asn	Gly	Ile	Ile	Phe	Asn	
				125					130					135	
Asn	Asn	Pro	Ala	His	Trp	Lys	Glu	Ile	Arg	Pro	Phe	Phe	Thr	Lys	
				140					145					150	
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Ile	Ala	Ile	Cys	Val	
				155					160					165	
Glu	Ser	Thr	Thr	Glu	His	Leu	Asp	Arg	Leu	Gln	Glu	Val	Thr	Thr	
				170					175					180	
Glu	Leu	Gly	Asn	Ile	Asn	Ala	Leu	Asn	Leu	Met	Arg	Arg	Ile	Met	
				185					190					195	
Leu	Asp	Thr	Ser	Asn	Lys	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asp	Glu	
				200					205					210	
Asn	Ala	Ile	Val	Leu	Lys	Ile	Gln	Asn	Tyr	Phe	Asp	Ala	Trp	Gln	
				215					220					225	
Ala	Leu	Leu	Leu	Lys	Pro	Asp	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	
				230					235					240	
Cys	Lys	Lys	Tyr	Lys	Asp	Ala	Val	Lys	Asp	Leu	Lys	Gly	Ala	Met	
				245					250					255	
Glu	Ile	Leu	Ile	Glu	Gln	Lys	Arg	Gln	Lys	Leu	Ser	Thr	Val	Glu	
				260					265					270	
Lys	Leu	Asp	Glu	His	Met	Asp	Phe	Ala	Ser	Gln	Leu	Ile	Phe	Ala	
				275					280					285	
Gln	Asn	Arg	Gly	Asp	Leu	Thr	Ala	Glu	Asn	Val	Asn	Gln	Cys	Val	
				290					295					300	
Leu	Glu	Met	Met	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Val	Thr	Leu	
				305					310					315	
Phe	Phe	Met	Leu	Ile	Leu	Ile	Ala	Glu	His	Pro	Thr	Val	Glu	Glu	
				320					325					330	
Glu	Met	Met	Arg	Glu	Ile	Glu	Thr	Val	Val	Gly	Asp	Arg	Asp	Ile	
				335					340					345	
Gln	Ser	Asp	Asp	Met	Pro	Asn	Leu	Lys	Ile	Val	Glu	Asn	Phe	Ile	
				350					355					360	
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Ile	Met	Arg	
				365					370					375	
Lys	Ala	Leu	Gln	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	
				380					385					390	
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Leu	Glu	
				395					400					405	
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Ser	Leu	Glu	Asn	Phe	Glu	Lys	
				410					415					420	
Asn	Val	Pro	Ser	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	
				425					430					435	
Ser	Cys	Val	Gly	Lys	Phe	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Ile	
				440					445					450	
Leu	Val	Thr	Leu	Leu	Arg	Arg	Cys	Arg	Val	Gln	Thr	Met	Lys	Gly	
				455					460					465	
Arg	Gly	Leu	Asn	Asn	Ile	Gln	Lys	Asn	Asn	Asp	Leu	Ser	Met	His	
				470					475					480	

Pro Ile Glu Arg Gln Pro
485

<210> 13

<211> 478

<212> PRT

<213> Rattus norvegicus

<400> 13

Val	Val	Ala	Arg	Ser	Leu	Cys	Asp	Leu	Lys	Cys	His	Pro	Ile	Asp
				005					010					015
Gly	Ile	Ser	Met	Ala	Thr	Arg	Thr	Leu	Ile	Leu	Leu	Val	Cys	Leu
				020					025					030
Leu	Leu	Val	Ala	Trp	Ser	His	Thr	Asp	Lys	Lys	Ile	Val	Pro	Gly
				035					040					045
Pro	Ser	Phe	Cys	Leu	Gly	Leu	Gly	Pro	Leu	Leu	Ser	Tyr	Leu	Arg
				050					055					060
Phe	Ile	Trp	Thr	Gly	Ile	Gly	Thr	Ala	Ser	Asn	Tyr	Tyr	Asn	Asn
				065					070					075
Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile	Asn	Gly	Glu	Glu	Thr
				080					085					090
Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	His	His	Val	Leu	Lys	Asn
				095					100					105
Gly	Asn	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Ile	Gln	Gly	Leu	Ser	Tyr
				110					115					120
Leu	Gly	Met	Asn	Glu	Arg	Gly	Ile	Ile	Phe	Asn	Asn	Asn	Val	Thr
				125					130					135
Leu	Trp	Lys	Lys	Ile	Arg	Thr	Tyr	Phe	Ala	Lys	Ala	Leu	Thr	Gly
				140					145					150
Pro	Asn	Leu	Gln	Gln	Thr	Val	Asp	Val	Cys	Val	Ser	Ser	Ile	Gln
				155					160					165
Ala	His	Leu	Asp	His	Leu	Asp	Ser	Leu	Gly	His	Val	Asp	Val	Leu
				170					175					180
Asn	Leu	Leu	Arg	Cys	Thr	Val	Leu	Asp	Ile	Ser	Asn	Arg	Leu	Phe
				185					190					195
Leu	Asn	Val	Pro	Leu	Asn	Glu	Lys	Glu	Leu	Met	Leu	Lys	Ile	Gln
				200					205					210
Lys	Tyr	Phe	His	Thr	Trp	Gln	Asp	Val	Leu	Ile	Lys	Pro	Asp	Ile
				215					220					225
Tyr	Phe	Lys	Phe	Arg	Trp	Ile	His	His	Arg	His	Lys	Thr	Ala	Thr
				230					235					240
Gln	Glu	Leu	Gln	Asp	Ala	Ile	Lys	Arg	Leu	Val	Asp	Gln	Lys	Arg
				245					250					255
Lys	Asn	Met	Glu	Gln	Ala	Asp	Lys	Leu	Asp	Asn	Ile	Asn	Phe	Thr
				260					265					270
Ala	Glu	Leu	Ile	Phe	Ala	Gln	Asn	His	Gly	Glu	Leu	Ser	Ala	Glu
				275					280					285
Asn	Val	Thr	Gln	Cys	Val	Leu	Glu	Met	Val	Ile	Ala	Ala	Pro	Asp
				290					295					300

Thr	Leu	Ser	Leu	Ser	Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	
				305					310					315	
Asn	Pro	His	Val	Glu	Pro	Gln	Leu	Leu	Gln	Glu	Ile	Asp	Ala	Val	
				320					325					330	
Val	Gly	Glu	Arg	Gln	Leu	Gln	Asn	Gln	Asp	Leu	His	Lys	Leu	Gln	
				335					340					345	
Val	Met	Glu	Ser	Phe	Ile	Tyr	Glu	Cys	Leu	Ser	Phe	His	Pro	Val	
				350					355					360	
Val	Asp	Phe	Thr	Met	Arg	Arg	Ala	Leu	Ser	Asp	Asp	Ile	Ile	Glu	
				365					370					375	
Gly	Tyr	Arg	Ile	Ser	Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Thr	Gly	
				380					385					390	
Arg	Met	His	Arg	Thr	Glu	Phe	Phe	Leu	Lys	Gly	Asn	Gln	Phe	Asn	
				395					400					405	
Leu	Glu	His	Phe	Glu	Asn	Asn	Val	Pro	Arg	Pro	Pro	Thr	Phe	Gln	
				410					415					420	
Pro	Phe	Gly	Ser	Gly	Pro	Arg	Ala	Cys	Ile	Gly	Lys	His	Met	Ala	
				425					430					435	
Met	Val	Met	Met	Lys	Ser	Ile	Leu	Val	Thr	Leu	Leu	Ser	Gln	Tyr	
				440					445					450	
Ser	Val	Cys	Thr	His	Glu	Gly	Pro	Ile	Leu	Asp	Cys	Leu	Pro	Gln	
				455					460					465	
Thr	Asn	Asn	Leu	Ser	Gln	Gln	Pro	Val	Glu	His	Gln	Gln			
				470					475						

<210> 14

<211> 478

<212> PRT

<213> *Oryctolagus cuniculus*

<400> 14

Met	Leu	Leu	Glu	Val	Leu	Asn	Pro	Arg	His	Tyr	Asn	Val	Thr	Ser	
			005					010					015		
Met	Val	Ser	Glu	Val	Val	Pro	Ile	Ala	Ser	Ile	Ala	Ile	Leu	Leu	
			020					025					030		
Leu	Thr	Gly	Phe	Leu	Leu	Leu	Val	Trp	Asn	Tyr	Glu	Asp	Thr	Ser	
			035					040					045		
Ser	Ile	Pro	Gly	Pro	Ser	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile	
			050					055					060		
Ser	His	Cys	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	
			065					070					075		
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Val	Cys	
			080					085					090		
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His	
			095					100					105		
Val	Met	Lys	His	Ser	His	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Leu	
			110					115					120		
Gly	Leu	Gln	Phe	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn	
			125					130					135		

<210> 15
 <211> 486
 <212> PRT
 <213> Homo sapiens
 <400> 15

Met	Val	Leu	Glu	Met	Leu	Asn	Pro	Ile	His	Tyr	Asn	Ile	Thr	Ser
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Ile	Val	Pro	Glu	Ala	Met	Pro	Ala	Ala	Thr	Met	Pro	Val	Leu	Leu
				020					025					030
Leu	Thr	Gly	Leu	Phe	Leu	Leu	Val	Trp	Asn	Tyr	Glu	Gly	Thr	Ser
				035					040					045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile
				050					055					060
Ser	His	Gly	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Arg	Val	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Ser
				080					085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His
				095					100					105
Ile	Met	Lys	His	Asn	His	Tyr	Ser	Ser	Arg	Phe	Gly	Ser	Lys	Leu
				110					115					120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Glu	Leu	Trp	Lys	Thr	Thr	Arg	Pro	Phe	Phe	Met	Lys
				140					145					150
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Val	Cys	Ala
				155					160					165
Glu	Ser	Leu	Lys	Thr	His	Leu	Asp	Arg	Leu	Glu	Glu	Val	Thr	Asn
				170					175					180
Glu	Ser	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Leu	Arg	Arg	Val	Met
				185					190					195
Leu	Asp	Thr	Ser	Asn	Thr	Leu	Phe	Leu	Arg	Ile	Pro	Leu	Asp	Glu
				200					205					210
Ser	Ala	Ile	Val	Val	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Ile	Lys	Pro	Asp	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
				230					235					240
Tyr	Lys	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Asp	Ala	Ile
				245					250					255
Glu	Val	Leu	Ile	Ala	Glu	Lys	Arg	Arg	Arg	Ile	Ser	Thr	Glu	Glu
				260					265					270
Lys	Leu	Glu	Glu	Cys	Met	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Leu	Ala
				275					280					285
Glu	Lys	Arg	Gly	Asp	Leu	Thr	Arg	Glu	Asn	Val	Asn	Gln	Cys	Ile
				290					295					300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Ser	Leu
				305					310					315

Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Asn	Val	Glu	Glu	
				320					325					330	
Ala	Ile	Ile	Lys	Glu	Ile	Gln	Thr	Val	Ile	Gly	Glu	Arg	Asp	Ile	
				335					340					345	
Lys	Ile	Asp	Asp	Ile	Gln	Lys	Leu	Lys	Val	Met	Glu	Asn	Phe	Ile	
				350					355					360	
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg	
				365					370					375	
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	
				380					385					390	
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	
				395					400					405	
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys	
				410					415					420	
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	
				425					430					435	
Gly	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Ile	
				440					445					450	
Leu	Val	Thr	Leu	Leu	Arg	Arg	Phe	His	Val	Lys	Thr	Leu	Gln	Gly	
				455					460					465	
Gln	Cys	Val	Glu	Ser	Ile	Gln	Lys	Ile	His	Asp	Leu	Ser	Leu	His	
				470					475					480	
Pro	Asp	Glu	Thr	Lys	Asn										
				485											

<210> 16

<211> 466

<212> PRT

<213> Gallus gallus

<400> 16

Met	Pro	Val	Ala	Thr	Val	Pro	Ile	Ile	Ile	Leu	Ile	Cys	Phe	Leu	
				005					010					015	
Phe	Leu	Ile	Trp	Asn	His	Glu	Glu	Thr	Ser	Ser	Ile	Pro	Gly	Pro	
				020					025					030	
Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile	Ser	His	Gly	Arg	Phe	
				035					040					045	
Leu	Trp	Met	Gly	Val	Gly	Asn	Ala	Cys	Asn	Tyr	Tyr	Asn	Lys	Thr	
				050					055					060	
Tyr	Gly	Glu	Phe	Val	Arg	Val	Trp	Ile	Ser	Gly	Glu	Glu	Thr	Phe	
				065					070					075	
Ile	Ile	Ser	Lys	Ser	Ser	Ser	Val	Phe	His	Val	Met	Lys	His	Trp	
				080					085					090	
Asn	Tyr	Val	Ser	Arg	Phe	Gly	Ser	Lys	Leu	Gly	Leu	Gln	Cys	Ile	
				095					100					105	
Gly	Met	Tyr	Glu	Asn	Gly	Ile	Ile	Phe	Asn	Asn	Asn	Pro	Ala	His	
				110					115					120	
Trp	Lys	Glu	Ile	Arg	Pro	Phe	Phe	Thr	Lys	Ala	Leu	Ser	Gly	Pro	
				125					130					135	

Gly	Leu	Val	Arg	Met	Ile	Ala	Ile	Cys	Val	Glu	Ser	Thr	Ile	Val
				140					145					150
His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Thr	Thr	Glu	Val	Gly	Asn	Val
				155					160					165
Asn	Val	Leu	Asn	Leu	Met	Arg	Arg	Ile	Met	Leu	Asp	Thr	Ser	Asn
				170					175					180
Lys	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asp	Glu	Ser	Ala	Ile	Val	Leu
				185					190					195
Lys	Ile	Gln	Asn	Tyr	Phe	Asp	Ala	Trp	Gln	Ala	Leu	Leu	Leu	Lys
				200					205					210
Pro	Asp	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	Cys	Lys	Lys	Tyr	Glu
				215					220					225
Glu	Ala	Ala	Lys	Asp	Leu	Lys	Gly	Ala	Met	Glu	Ile	Leu	Ile	Glu
				230					235					240
Gln	Lys	Arg	Gln	Lys	Leu	Ser	Thr	Val	Glu	Lys	Leu	Asp	Glu	His
				245					250					255
Met	Asp	Phe	Ala	Ser	Gln	Leu	Ile	Phe	Ala	Gln	Asn	Arg	Gly	Asp
				260					265					270
Leu	Thr	Ala	Glu	Asn	Val	Asn	Gln	Cys	Val	Leu	Glu	Met	Met	Ile
				275					280					285
Ala	Ala	Pro	Asp	Thr	Leu	Ser	Val	Thr	Leu	Phe	Ile	Met	Leu	Ile
				290					295					300
Leu	Ile	Ala	Asp	Asp	Pro	Thr	Val	Glu	Glu	Lys	Met	Met	Arg	Glu
				305					310					315
Ile	Glu	Thr	Val	Met	Gly	Asp	Arg	Glu	Val	Gln	Ser	Asp	Asp	Met
				320					325					330
Pro	Asn	Leu	Lys	Ile	Val	Glu	Asn	Phe	Ile	Tyr	Glu	Ser	Met	Arg
				335					340					345
Tyr	Gln	Pro	Val	Val	Asp	Leu	Ile	Met	Arg	Lys	Ala	Leu	Gln	Asp
				350					355					360
Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	Gly	Thr	Asn	Ile	Ile
				365					370					375
Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Leu	Glu	Phe	Phe	Pro	Lys	Pro
				380					385					390
Asn	Glu	Phe	Ser	Leu	Glu	Asn	Phe	Glu	Lys	Asn	Val	Pro	Ser	Arg
				395					400					405
Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	Gly	Cys	Val	Gly	Lys
				410					415					420
Phe	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Ile	Leu	Val	Thr	Leu	Leu
				425					430					435
Arg	Arg	Cys	Arg	Val	Gln	Thr	Met	Lys	Gly	Arg	Gly	Leu	Asn	Asn
				440					445					450
Ile	Gln	Lys	Asn	Asn	Asp	Leu	Ser	Met	His	Pro	Ile	Glu	Arg	Gln
				455					460					465

Pro

<210> 17

<211> 486

<212> PRT

<213> Poephila guttata

<400> 17

Met	Phe	Leu	Glu	Met	Leu	Asn	Pro	Met	His	Tyr	Asn	Val	Thr	Ile	
				005					010						015
Met	Val	Pro	Glu	Thr	Val	Pro	Val	Ser	Ala	Met	Pro	Leu	Leu	Leu	
				020					025						030
Ile	Met	Gly	Leu	Leu	Leu	Leu	Ile	Arg	Asn	Cys	Glu	Ser	Ser	Ser	
				035					040						045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Leu	Gly	Ile	Gly	Pro	Leu	Ile	
				050					055						060
Ser	His	Gly	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	
				065					070						075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Ser	
				080					085						090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Val	His	
				095					100						105
Val	Met	Lys	His	Ser	Asn	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Arg	
				110					115						120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn	
				125					130						135
Asn	Asn	Pro	Ser	Leu	Trp	Arg	Thr	Val	Arg	Pro	Phe	Phe	Met	Lys	
				140					145						150
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Ile	Arg	Met	Val	Glu	Val	Cys	Val	
				155					160						165
Glu	Ser	Ile	Lys	Gln	His	Leu	Asp	Arg	Leu	Gly	Asp	Val	Thr	Asp	
				170					175						180
Asn	Ser	Gly	Tyr	Val	Asp	Val	Val	Thr	Leu	Met	Arg	His	Ile	Met	
				185					190						195
Leu	Asp	Thr	Ser	Asn	Thr	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu	
				200					205						210
Ser	Ser	Ile	Val	Lys	Lys	Ile	Gln	Gly	Tyr	Phe	Asn	Ala	Trp	Gln	
				215					220						225
Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	
				230					235						240
Tyr	Arg	Lys	Tyr	Glu	Arg	Ser	Val	Lys	Asp	Leu	Lys	Asp	Glu	Ile	
				245					250						255
Glu	Ile	Leu	Val	Glu	Lys	Lys	Arg	Gln	Lys	Val	Ser	Ser	Ala	Glu	
				260					265						270
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Phe	Ala	
				275					280						285
Glu	Arg	Arg	Gly	Asp	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	
				290					295						300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Leu	
				305					310						315
Tyr	Val	Met	Leu	Leu	Leu	Ile	Ala	Glu	Tyr	Pro	Glu	Val	Glu	Thr	
				320					325						330
Ala	Ile	Leu	Lys	Glu	Ile	His	Thr	Val	Val	Gly	Asp	Arg	Asp	Ile	

	335		340		345
Arg Ile Gly Asp Val Gln Asn Leu Lys Val Val Glu Asn Phe Ile					
	350		355		360
Asn Glu Ser Leu Arg Tyr Gln Pro Val Val Asp Leu Val Met Arg					
	365		370		375
Arg Ala Leu Glu Asp Asp Val Ile Asp Gly Tyr Pro Val Lys Lys					
	380		385		390
Gly Thr Asn Ile Ile Leu Asn Ile Gly Arg Met His Arg Leu Glu					
	395		400		405
Tyr Phe Pro Lys Pro Asn Glu Phe Thr Leu Glu Asn Phe Glu Lys					
	410		415		420
Asn Val Pro Tyr Arg Tyr Phe Gln Pro Phe Gly Phe Gly Pro Arg					
	425		430		435
Ser Cys Ala Gly Lys Tyr Ile Ala Met Val Met Met Lys Val Val					
	440		445		450
Leu Val Thr Leu Leu Lys Arg Phe His Val Lys Thr Leu Gln Lys					
	455		460		465
Arg Cys Ile Glu Asn Met Pro Lys Asn Asn Asp Leu Ser Leu His					
	470		475		480
Leu Asp Glu Asp Ser Pro					
	485				

<210> 18

<211> 50

<212> PRT

<213> Homo sapiens

<400> 18

Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg			
Asp			
	005	010	015
Leu Leu His Val Leu Ala Phe Ser Lys Ser Cys His Leu Pro			
Trp			
	020	025	
030			
Ala Ser Gly Leu Glu Thr Leu Asp Ser Leu Gly Gly Val Leu			
Glu			
	035	040	045
Ala Ser Gly Tyr Ser			
	050		

<210> 19

<211> 50

<212> PRT

<213> Pan troglodytes

<400> 19

Arg Asn Met Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg			
Asp			
	005	010	015

Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	
Trp														
				020					025					
030														
Ala	Ser	Gly	Leu	Glu	Thr	Leu	Asp	Ser	Leu	Gly	Gly	Val	Leu	
Glu														
				035					040					045
Ala	Ser	Gly	Tyr	Ser										
				050										

<210> 20
 <211> 50
 <212> PRT
 <213> Gorilla gorilla
 <400> 20

Arg	Asn	Met	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	
Asp														
				005					010					015
Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	
Trp														
				020					025					
030														
Ala	Ser	Gly	Leu	Glu	Thr	Leu	Asp	Ser	Leu	Gly	Gly	Val	Leu	
Glu														
				035					040					045
Ala	Ser	Gly	Tyr	Ser										
				050										

<210> 21
 <211> 50
 <212> PRT
 <213> Orangutan
 <400> 21

Arg	Asn	Val	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	
Asp														
				005					010					015
Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	
Trp														
				020					025					
030														
Ala	Ser	Gly	Leu	Glu	Thr	Leu	Asp	Arg	Leu	Gly	Gly	Val	Leu	
Glu														
				035					040					045
Ala	Ser	Gly	Tyr	Ser										
				050										

<210> 22
 <211> 50

<212> PRT

<213> Rhesus monkey

<400> 22

Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg
Asp

005 010 015

Leu Leu His Leu Leu Ala Phe Ser Lys Ser Cys His Leu Pro
Leu

020 025

030
Ala Ser Gly Leu Glu Thr Leu Glu Ser Leu Gly Asp Val Leu
Glu

035 040 045

Ala Ser Leu Tyr Ser
050

<210> 23

<211> 50

<212> PRT

<213> Rattus norvegicus

<400> 23

Gln Asn Val Leu Gln Ile Ala His Asp Leu Glu Asn Leu Arg
Asp

005 010 015

Leu Leu His Leu Leu Ala Phe Ser Lys Ser Cys Ser Leu Pro
Gln

020 025

030
Thr Arg Gly Leu Gln Lys Pro Glu Ser Leu Asp Gly Val Leu
Glu

035 040 045

Ala Ser Leu Tyr Ser
050

<210> 24

<211> 50

<212> PRT

<213> Rattus norvegicus

<400> 24

Gln Asn Val Leu Gln Ile Ala His Asp Leu Glu Asn Leu Arg
Asp

005 010

015
Leu Leu His Leu Leu Ala Phe Ser Lys Ser Cys Ser Leu Pro
Gln

020 025

030

Thr Arg Gly Leu Gln Lys Pro Glu Ser Leu Asp Gly Val Leu
Glu

035

040

045

Ala Ser Leu Tyr Ser
050

<210> 25

<211> 50

<212> PRT

<213> Mus musculus

<400> 25

Gln Asn Val Leu Gln Ile Ala Asn Asp Leu Glu Asn Leu Arg
Asp

005

010

015

Leu Leu His Leu Leu Ala Phe Ser Lys Ser Cys Ser Leu Pro
Gln

020

025

030

Thr Ser Gly Leu Gln Lys Pro Glu Ser Leu Asp Gly Val Leu
Glu

035

040

045

Ala Ser Leu Tyr Ser
050

<210> 26

<211> 50

<212> PRT

<213> Ancestral sequence

<400> 26

Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg
Asp

005

010

015

Leu Leu His Leu Leu Ala Ser Ser Lys Ser Cys Pro Leu Pro
Gln

020

025

030

Ala Arg Gly Leu Glu Thr Leu Glu Ser Leu Gly Gly Val Leu
Glu

035

040

045

Ala Ser Leu Tyr Ser
050

<210> 27

<211> 50

<212> PRT

<213> Sus scrofa

<400> 27

Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg
Asp

	005	010	015
Leu Leu His Leu Leu Ala Ser Ser Lys Ser Cys Pro Leu Pro			
Gln			
	020	025	030
Ala Arg Ala Leu Glu Thr Leu Glu Ser Leu Gly Gly Val Leu			
Glu			
	035	040	045
Ala Ser Leu Tyr Ser			
050			

<210> 28
 <211> 50
 <212> PRT
 <213> Ovis
 <400> 28

Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg
Asp

	005	010	015
Leu Leu His Leu Leu Ala Ala Ser Lys Ser Cys Pro Leu Pro			
Gln			
	020	025	030
Val Arg Ala Leu Glu Ser Leu Glu Ser Leu Gly Val Val Leu			
Glu			
	035	040	045
Ala Ser Leu Tyr Ser			
050			

<210> 29
 <211> 50
 <212> PRT
 <213> Bos taurus
 <400> 29

Arg Asn Val Val Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg
Asp

	005	010	015
Leu Leu His Leu Leu Ala Ala Ser Lys Ser Cys Pro Leu Pro			
Gln			
	020	025	030
Val Arg Ala Leu Glu Ser Leu Glu Ser Leu Gly Val Val Leu			
Glu			
	035	040	045
Ala Ser Leu Tyr Ser			
050			

<210> 30
 <211> 50
 <212> PRT
 <213> Dog

<400> 30

Arg Asn Val Val Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg
Asp

005 010 015

Leu Leu His Leu Leu Ala Ser Ser Lys Ser Cys Pro Leu Pro
Arg

020 025 030

Ala Arg Gly Leu Glu Thr Phe Glu Ser Leu Gly Gly Val Leu
Glu

035 040 045

Ala Ser Leu Tyr Ser
050

<210> 31

<211> 28

<212> PRT

<213> Sus scrofa

<400> 31

Asn His Tyr Thr Cys Arg Phe Gly Ser Lys Leu Gly Leu Glu
Cys

005 010 015

Ile Gly Met His Glu Lys Gly Ile Met Phe Asn Asn Asn

020 025

<210> 32

<211> 28

<212> PRT

<213> Sus scrofa

<400> 32

Ser His Tyr Thr Ser Arg Phe Gly Ser Lys Pro Gly Leu Gln
Phe

005 010 015

Ile Gly Met His Glu Lys Gly Ile Ile Phe Asn Asn Asn

020 025

<210> 33

<211> 28

<212> PRT

<213> Sus scrofa

<400> 33

Ser His Tyr Thr Ser Arg Phe Gly Ser Lys Pro Gly Leu Glu
Cys

005 010 015

Ile Gly Met Tyr Glu Lys Gly Ile Ile Phe Asn Asn Asp

020 025

<210> 34

<211> 28

<212> PRT

<213> White lipped peccary

<400> 34

Ser His Tyr Thr Ser Arg Phe Gly Ser Lys Pro Gly Leu Gln
Phe

005

010

015

Ile Gly Met His Glu Lys Gly Ile Ile Phe Asn Asn Asn
020 025

<210> 35

<211> 83

<212> DNA

<213> Sus scrofa

<400> 35

CAATCATTAC ACGTGCCGAT TTGGCAGCAA ACTTGGGTTG GAATGCATTG GCATGCATGA 60
AAAAGGCATCA TGTTTAACAA TAA

<210> 36

<211> 84

<212> DNA

<213> Sus scrofa

<400> 36

TAGTCACTAC ACATCCCGAT TTGGCAGCAA ACCTGGGTTG CAGTTCATTG GCATGCATGA 60
GAAAGGCATT ATATTCAACA ATAA

<210> 37

<211> 84

<212> DNA

<213> Sus scrofa

<400> 37

CAGTCACTAC ACATCCCGAT TCGGCAGCAA ACCTGGGTTG GAGTGCATCG GCATGTATGA 60
GAAGGGCATC ATATTTAATA ATGA

<210> 37

<211> 84

<212> DNA

<213> White lipped peccary

<400> 37

CAGTCACTAC ACATCCCGAT TCGGCAGCAA ACCTGGGTTG CAGTTCATTG GAATGCATGA 60
GAAAGGCATC ATATTTAACA ACAA